

Time: 3 Hours

Full Marks: 60

All questions are of equal value. Answer any Four (04) questions. All parts of each question must be answered consecutively.

(Figures in the right margin indicates marks of a question)

1.
 - a) Four financial statements are prepared from the summarized accounting data, what are these statements, write down in short. (5)
 - b) State the accounting equation, & define assets, liabilities, & owner's equity. What items affect the Owner's Equity? (5)
 - c) What do you mean by Monetary unit & Economic unit assumption? (3)
 - d) Is there any difference between Accounting & Bookkeeping? If yes, show the differences. (2)
2. Ms. Iram opens her own law office on July 1, 2011. During the first month of operations the following transactions occurred.
 - i) Invested Tk. 10,000 in cash in the law practice
 - ii) Paid Tk.800 for July rent on office space.
 - iii) Purchased office equipment on account Tk. 3,000
 - iv) Provided legal services to clients for cash Tk.1500.
 - v) Borrowed Tk.700 cash from a bank on a note payable.
 - vi) Performed legal services for client on account Tk. 2,000.
 - vii) Paid monthly expenses: salaries Tk.500, utilities Tk.300, and telephone Tk.100.

Instructions

- a) Prepare a tabular summary of the transactions. (5)
- b) Prepare the income statement, owner's equity statement, and balance sheet at July 31 for Ms. Iram, Attorney at Law. (10)

- Bobby Sample opened the campus laundromat on September 1, 2008. During the first month of operations the following events occurred.
- Sept. 1 Invested Tk. 20,000 cash in the business
- Sept. 2 paid Tk. 1,000 cash for store rent for September
- Sept. 3 purchased washers and dryers for Tk. 25,000, paying Tk. 10,000 in cash and

signing a Tk. 5,000, 6-month, 12% note payable.

Sept. 4 paid Tk. 1,200 for a one-year accident insurance policy.

Sept. 10 Received a bill from the Daily News for advertising the opening of Laundromat
Tk. 200

Sept. 20 Withdrew Tk. 700 cash for personal use.

Sept. 30 Determined that cash receipts for laundry services for the month were Tk. 6,200

Instructions

- a) Journalize the September transaction. (6)
- b) Open ledger accounts and post the September transactions. (3)
- c) Prepare a trial balance at September 30, 2008. (6)

4. A) Are there any leadership theories available in the world? If yes, discuss the leadership theories. (10)

B) Briefly describe the characteristics of well-designed goals. (5)

5. A) Who has given the 14 PRINCIPLES OF MANAGEMENT & who is he? Describe the principles with pertinent examples? (10)

B) What is Span of Control? Describe the factors affecting the width of the span of control. (5)

6. A) According to Mintzberg, managers play some roles, what are these, discuss in short? (10)

B) Describe the Approaches to establishing goals. (5)

Department of CSE
Jahangirnagar University

1st Year 2nd Semester Final Examination, 2017

Batch # 46, Session: 2016-17

Course Code: CSE-161 (Management and Accounting)

Marks: 60

Time: 3 Hours

**[Answer any Six (6) of the following questions. Each question carries 10 marks.
All parts of each questions must be answered consecutively.]**

Question-1.

[Marks: 6+4=10]

- A) What is management? Explain the Henry Fayol 14 principles of management with pertinent example.
B) Demonstrate the management process that you can apply in an organization for making the organization more effective and efficient.

Question-2.

[Marks: 5+5=10]

- A) Define business environment with example? Consider the three environments of a firm.
Which of the environments has the most direct and immediate impact on the firm?
B) In setting goal you may face some major barriers what are those barriers and how you can overcome those barriers? Explain

Question-3.

[Marks: 2+5+3=10]

- A) Define motivation with example.
B) Illustrate the Maslow's Hierarchy of Needs theory with relevant example.
C) Distinguish between charismatic leadership and transformational leadership.

Question-4.

[Marks: 6+4=10]

- A) What is departmentalization? What are the common bases for departmentalization?
B) What is the purpose of organizational control? Why is it important?

Question-5.

[Marks: 2+3+3+2]

- A) "Bookkeeping and accounting are the same." Do you agree? Explain.
B) What is a trial balance and what are its purposes?
C) Why do accrual-basis financial statements provide more useful information than cash-basis statements?
D) "The steps in the accounting cycle for a merchandising company are different from the accounting cycle for a service company." Do you agree or disagree? Explain

Question-6.

[Marks: 2+8]

- A) What is the basic accounting equation? Define the terms assets, liabilities, and owner's equity.
B) Carla Quentin started her own consulting firm, Quentin Consulting, on May 1, 2012. The following transactions occurred during the month of May.
May 1 Carla invested \$7,000 cash in the business.
2 Paid \$900 for office rent for the month.
3 Purchased \$600 of supplies on account.
5 Paid \$125 to advertise in the County News.
9 Received \$4,000 cash for services provided.

- 12 Withdrew \$1,000 cash for personal use.
 15 Performed \$5,400 of services on account.
 17 Paid \$2,500 for employee salaries.
 20 Paid for the supplies purchased on account on May 3.
 23 Received a cash payment of \$4,000 for services provided on account on May 15.
 26 Borrowed \$5,000 from the bank on a note payable.
 29 Purchased office equipment for \$4,200 on account.

Instructions: i) Prepare a tabular analysis of the May transactions.

ii) Prepare an income statement and an Owners equity statement.

Question-7.

[Marks: 10]

Frontier Park was started on April 1 by H. Hillenmeyer. The following selected events and transactions occurred during April.

Apr. 1 Hillenmeyer invested \$35,000 cash in the business.

- 4 Purchased land costing \$27,000 for cash.
 8 Incurred advertising expense of \$1,800 on account.
 11 Paid salaries to employees \$1,500.
 12 Hired park manager at a salary of \$4,000 per month, effective May 1.
 13 Paid \$1,650 cash for a one-year insurance policy.
 17 Withdrew \$1,000 cash for personal use.
 20 Received \$6,800 in cash for admission fees.
 30 Paid \$900 on balance owed for advertising incurred on April 8.

Instructions: (a) Journalize the transactions. (Omit Explanation)

(b) Post to the ledger accounts.

(c) Prepare a trial balance.

Question-8.

[Marks: 7+3=10]

A) The trial balance columns of the worksheet for Tinoisamo Company at June 30, 2012, are as follows.

TINOISAMOA COMPANY
Worksheet
For the Month Ended June 30, 2012

Account Titles	Trial Balance	
	Dr.	Cr.
Cash		
Accounts Receivable	\$2,320	
Supplies	2,440	
Accounts Payable	1,880	
Unearned Service Revenue		\$1,120
Owner's Capital		240
Service Revenue		3,600
Salaries and Wages Expense		2,400
Miscellaneous Expense	560	
Total	160	
Other data:	\$7,360	\$7,360

1. A physical count reveals \$500 of supplies on hand.
2. \$100 of the unearned revenue is still unearned at month-end.
3. Accrued salaries are \$210.

Instructions: Enter the trial balance on a worksheet and complete the **worksheet**.

B) Hanson Company has an inexperienced accountant. During the first month on the job, the accountant made the following errors in journalizing transactions. All entries were posted as made.

1. The purchase of supplies for \$650 cash was debited to Equipment \$210 and credited to Cash \$210.
2. A \$500 withdrawal of cash for B. Hanson's personal use was debited to Salaries and Wages Expense \$900 and credited to Cash \$900.
3. A payment on account of \$820 to a creditor was debited to Accounts Payable \$280 and credited to Cash \$280.

Requirement: Prepare the correcting entries.

Jahangirnagar University
Department of Computer Science & Engineering
1st Year 2nd Semester B.Sc. (Hons.) Final Examination 2017

Course No: CSE-161

Time: 3 Hours.

Course Title: Management and Accounting
Total Marks: 60

Answer any FOUR questions. All parts of each question must be answered consecutively.

1. a) Four financial statements are prepared from the summarized accounting data. 5
what are these statements, write down in short.
- b) State the accounting equation, & define assets, liabilities, & owner's equity. 5
What items affect the Owner's Equity?
- c) What do you mean by Monetary unit & Economic unit assumption? 3
- d) Is there any difference between Accounting & Bookkeeping? If yes, show the differences. 2

2. a) What is span of management? How a manager can determine the appropriate span of management? 5
- b) What is specialization? Identify and describe the alternatives to specialization. 5
- c) What is leadership? Discuss about the various nature of leadership practices in organization 3
- d) Distinguished between goal and plan of an organization. 2

3. Ms. Iram opens her own law office on July 1, 2011. During the first month of operations the following transactions occurred.
 - i) Invested Tk. 10,000 in cash in the law practice
 - ii) Paid Tk.800 for July rent on office space.
 - iii) Purchased office equipment on account Tk. 3,000
 - iv) Provided legal services to clients for cash Tk.1500.
 - v) Borrowed Tk.700 cash from a bank on a note payable.
 - vi) Performed legal services for client on account Tk. 2,000.
 - vii) Paid monthly expenses: salaries Tk.500, utilities Tk.300, and telephone Tk.100.

Instructions

- a) Prepare a tabular summary of the transactions. 5
 - b) Prepare the income statement, owner's equity statement, and balance sheet at July 31 for Ms. Iram, Attorney at Law. 10
-
4. Bobby Sample opened the campus laundromat on September 1, 2008. During the first month of operations the following events occurred.
Sept. 1 Invested Tk. 20,000 cash in the business

Sept. 2 paid Tk. 1,000 cash for store rent for September
Sept. 3 purchased washers and dryers for Tk. 25,000, paying Tk. 10,000
in cash and signing a Tk. 5,000, 6-month, 12% note payable.
Sept. 4 paid Tk. 1,200 for a one-year accident insurance policy.
Sept. 10 Received a bill from the Daily News for advertising the opening
of Laundromat Tk. 200
Sept. 20 Withdrew Tk. 700 cash for personal use.
Sept. 30 Determined that cash receipts for laundry services for the month
were Tk. 6,200

Instructions

- | | | |
|----|---|---|
| a) | Journalize the September transaction. | 6 |
| b) | Open ledger accounts and post the September transactions. | 3 |
| c) | Prepare a trial balance at September 30, 2008. | 6 |
5. a) Are there any leadership theories available in the world? If yes, discuss the 10
leadership theories.
- b) Briefly describe the characteristics of well-designed goals. 5
6. a) According to Mintzberg, managers play some roles, what are these, discuss in 10
short?
- b) Describe the Approaches to establishing goals. 5

Jahangirnagar University
Department of Computer Science & Engineering

1st Year 2nd Semester B.Sc. (Hons.) Final Examination 2016

Course ID: CSE-161 (Management and Accounting)

Time: 3 Hours Total Marks: 60

Answer ANY SIX of the following questions. Each question carries 10 marks. All parts of each question must be answered consecutively.

1. a) Distinguish between goal and plan of an organization.
b) Define business environment with example. Consider the three environments of a farm. Which of the environments has the most direct and immediate impact on the farm.
c) In setting goal, you may face some major barriers; what are those barriers and how can you overcome those barriers? Explain. 2 + 4 + 4
2. a) What is span of management? How a manager can determine the appropriate span of management?
b) Define specialization with example. Identify and describe the alternatives to specialization.
c) Illustrate the controlling process of an organization with relevant example. 3 + 4 + 3
3. a) Four financial statements are prepared from the summarized accounting data; what are these statements? Write down in short.
b) State the accounting equation, & define assets, liabilities, & owner's equity. What items affect the owner's equity?
c) What do you mean by Monetary unit and Economic unit assumption? 4 + 4 + 2
4. a) What do you understand by Accounting and Information Systems? Give examples.
b) Ramona Castro opened a veterinary business in Nashville, Tennessee, on August 1. During September, the following transactions occurred:
1. Paid \$2,900 cash on accounts payable.
2. Collected \$1,300 of accounts receivable.
3. Purchased additional office equipment for \$2,100, paying \$800 in cash and the balance on account.
4. Earned revenue of \$7,800 of which \$2,500 is received in cash and the balance is due in October.
5. Withdrew \$1,100 cash for personal use.
6. Paid salaries \$1,700, rent for September \$900, and advertising expense \$450.
7. Incurred utilities expense for month on account \$170.
8. Received \$10,000 from Capital Bank (money borrowed on a note payable). 2 + 8

Instructions: Prepare a tabular analysis of the September transactions.

5. a) Are there any leadership theories available in the World? If YES, discuss the leadership theories.
b) Briefly describe the characteristics of well-designed goals. 6 + 4
6. a) Who has given the 14 PRINCIPLES OF MANAGEMENT and who is he? Describe the principles with pertinent examples.
b) Describe the Approaches to establishing goals. 6 + 4

Victoria Hall is licensed dentist. During the first month of the operation of her business, the following events and transactions occurred.

- April 1** Invested \$20,000 cash in her business.
April 1 Hired a secretary-receptionist at a salary of \$700 per week payable monthly.
April 2 Paid office rent for the month \$1,100
April 3 Purchased dental supplies on account from Smile Company \$4,000
April 10 Provided dental services and billed insurance companies \$5,100
April 11 Received \$1,000 cash advance from Trudy Borke for an implant.
April 20 Received \$2,100 cash for services completed and delivered to John Carl.
April 30 Paid secretary-receptionist for the month \$2,800.
April 30 Paid \$2,400 to Smile Company for accounts payable due.
- Instructions:** (a) Journalize the transactions, (b) Post to the ledger accounts, (c) Prepare a trial balance.

8.

5 + 5

- a) Turner Company ended its financial year on July 31, 2012. The company's adjusted trial balance as of the end of its fiscal year is as shown below:

TURNER COMPANY
Adjusted Trial Balance

July 31, 2012

<u>Account Titles</u>	<u>Debits</u>	<u>Credits</u>
Cash	\$9,840	9840
Accounts Receivable	\$8,780	
Equipment	\$15,900	
Accumulated Depreciation-Equipment		\$7,400
Accounts Payable		\$4,220
Unearned Rent Revenue		\$1,800
Owner's Capital		\$45,200
Owner's Drawings	\$16,000	
Service Revenue		\$64,000
Rent Revenue		\$6,500
Depreciation Expense	\$8,000	
Salaries and Wages Expense	\$55,700	
Utilities Expense	\$14,900	
	\$129,120	\$129,120

Instruction: Prepare the adjusting entries.

- b) Terry Thomas opens the Green Thumb Lawn Care Company on April 1. At April 30, the trial balance shows the following balances for selected accounts.

Prepaid Insurance \$3,600
 Equipment \$28,000
 Notes Payable \$20,000
 Unearned Service Revenue \$4,200
 Service Revenue \$1,800

Analysis reveals the following additional data.

1. Prepaid insurance is the cost of a 2-year insurance policy, effective April 1.
2. Depreciation on the equipment is \$500 per month.
3. The note payable is dated April 1. It is a 6-month, 12% note.
4. Seven customers paid for the company's 6 months' lawn service package of \$600 beginning in April. The company performed services for these customers in April.
5. Lawn services provided other customers but not recorded at April 30 totaled \$1,500
6. At August 31, the company ~~owed~~ ^{owed} its employees \$800 in salaries and wages that will be paid on September 1.
7. On August 1, the company borrowed \$30,000 from a local bank on a 15-year mortgage. The annual interest rate is 10%.

Instruction: Prepare the adjusting entries.

JAHANGIRNAGAR UNIVERSITY
Department of Computer Science and Engineering
1st Year 2nd Semester B.Sc.(Hons.) Final Examination, 2015

Course ID: CSE-161
Time Allowed: 3 hrs.

Course Title: Management and Accounting
Full Marks: 60

[Answer any Six (6) of the following questions. Each question carries 10 marks. All parts of each question must be answered consecutively. Figure in the right margin indicates marks of a question]

1. a) Define Management with your own word with pertinent example. 1
b) Suppose you are a manager of "X" company, what kind of roles you have to play for that company describe with example? 4
c) Demonstrate the management process that you can apply in an organization for making the organization more effective and efficient. 5
2. a) What is Span of Control? Describe the factors affecting the width of the span of control. 5
b) Describe the approaches to establishing goals. 5
3. a) What do you mean by Motivation? Give an example. 1
b) Discuss about the Herzberg two factor theory of motivation. 4
c) Illustrate the Maslow's Hierarchy of Needs theory with relevant example. 5
4. a) What do you mean by Monetary unit and Economic unit assumption? 3
b) Is there any difference between Accounting and Bookkeeping? If yes, show the differences. 2
c) Four financial statements are prepared from the summarized accounting data, what are these statements, write down in short. 5
5. a) What do you understand by Accounting and Information Systems? 1
b) On April 1, Vince Morelli established Vinc's Travel Agency. The following transactions were completed during the month.
 1. Invested \$15,000 cash to start the agency.
 2. Paid \$600 cash for April office rent.
 3. Purchased office equipment for \$3,000 cash.
 4. Incurred \$700 of advertising costs in the *Chicago Tribune*, on account.
 5. Paid \$800 cash for office supplies.
 6. Earned \$10,000 for services rendered: \$3,000 cash is received from customers, and the balance of \$7,000 is billed to customers on account.
 7. Withdrew \$500 cash for personal use.
 8. Paid *Chicago Tribune* \$500 of the amount due in transaction (4).
 9. Paid employees' salaries \$2,500.
 10. Received \$4,000 in cash from customers who have previously been billed in transaction (6).9

Instructions: Prepare a tabular summary of the transactions.

6. Desiree Clark is a licensed CPA. During the first month of operations of her business, the following events and transactions occurred. 4+4+2

May 1 Clark invested \$20,000 cash in her business.
 2 Hired a secretary-receptionist at a salary of \$2,000 per month.
 3 Purchased \$2,500 of supplies on account from Read Supply Company.
 7 Paid office rent of \$900 cash for the month.
 11 Completed a tax assignment and billed client \$3,200 for services provided.
 12 Received \$3,500 advance on a management consulting engagement.
 17 Received cash of \$1,200 for services completed for C. Desmond Co.
 31 Paid secretary-receptionist \$2,000 salary for the month.
 31 Paid 60% of balance due Read Supply Company.

Instructions: (a) Journalize the transactions. (b) Post to the ledger accounts.
 (c) Prepare a trial balance on May 31, 2012.

7. Omer Asik began operations as a private investigator on January 1, 2012. The trial balance columns of the worksheet for Omer Asik, P.I. at March 31 are as follows. 10

Account Titles	Dr.	Cr.
Cash	11,400	
Accounts Receivable	5,620	
Supplies	1,050	
Prepaid Insurance	2,400	
Equipment	30,000	
Notes Payable		10,000
Accounts Payable		12,350
Owner's Capital		20,000
Owner's Drawings	600	
Service Revenue		13,620
Salaries and Wages Expense	2,200	
Travel Expense	1,300	
Rent Expense	1,200	
Miscellaneous Expense	200	
Total	55,970	55,970

Other data:

1. Supplies on hand total \$480.
2. Depreciation is \$800 per quarter.
3. Interest accrued on 6-month note payable, issued January 1, \$300.
4. Insurance expires at the rate of \$200 per month.
5. Services provided but unbilled at March 31 total \$1,030.

Instructions: Enter the trial balance on a worksheet and complete the worksheet.

8. a) Danielle Manning, D.D.S., opened a dental practice on January 1, 2012. During the first month of operations, the following transactions occurred.
1. Performed services for patients who had dental plan insurance. At January 31, \$875 of such services was earned but not yet recorded.
 2. Utility expenses incurred but not paid prior to January 31 totaled \$650.
 3. Purchased dental equipment on January 1 for \$80,000, paying \$20,000 in cash and signing a \$60,000, 3-year note payable. The equipment depreciates \$400 per month. Interest is \$500 per month.
 4. Purchased a one-year malpractice insurance policy on January 1 for \$24,000.
 5. Purchased \$1,600 of dental supplies. On January 31, determined that \$400 of supplies were on hand.

4

Instructions: Prepare the adjusting entries on January 31.

- b) Jeremy's Book Warehouse distributes hardcover books to retail stores and extends credit terms of 2/10, n/30 to all of its customers. At the end of May, Jeremy's inventory consisted of books purchased for \$1,800. During June, the following merchandising transactions occurred.

6

June 1 Purchased books on account for \$1,600 from Davies Publishers, FOB destination, terms 2/10, n/30. The appropriate party also made cash payment of \$50 for the freight on this date.

3. Sold books on account to Reading Rainbow for \$2,500. The cost of the books sold was \$1,440.

6. Received \$100 credit for books returned to Davies Publishers.

9. Paid Davies Publishers in full, less discount.

15. Received payment in full from Reading Rainbow.

17. Sold books on account to Lapidus Books for \$1,800. The cost of the books sold was \$1,080.

20. Purchased books on account for \$1,500 from Fahey Publishers, FOB destination, terms 2/15, n/30. The appropriate party also made a cash payment of \$50 for the freight on this date.

24. Received payment in full from Lapidus Books.

26. Paid Fahey Publishers in full, less discount.

28. Sold books on account to Carlyle Bookstore for \$1,400. The cost of the books sold was \$850.

30. Granted Carlyle Bookstore \$120 credit for books returned costing \$72.

Instructions: Journalize the transactions for the month of June using a perpetual inventory system.

-----XXXXXX-----

Jahangirnagar University
 Department of Computer Science and Engineering
 3rd Year 1st Semester B.Sc. (Hons.) Final Examination 2019

Course Code: CSE-303
 Full Marks: 60

Course Title: Microprocessors and Microcontrollers
 Time: 3 Hours

Answer any Six of the following questions.

1. (a) What is microprocessor? What are the basic differences between microprocessor and microcontroller? 1+2
- (b) Write down the relative advantages and disadvantages of high level language and assembly language. 3.5
- (c) Discuss full/partial decoding technique for designing the main memory. 3.5
2. (a) Draw the Pin diagram of 8086 microprocessor when it works in maximum mode and give a truth table of Pin no. 24 and 25. 3.5
- (b) Draw the flag registers of 8086 microprocessor and state the functioning of each bit. 3.5
- (c) Draw the internal architecture of 8086 microprocessor and mention the purpose of BIU and EU. 3
3. (a) Describe the interrupt response of an 8086 family processor. 3
- (b) Discuss the operation of an 8259A priority interrupt controller. 4
- (c) Why is it necessary at the start of an interrupt service procedure to PUSH all registers used in the procedure and to POP them at the end of the procedure? 3
4. (a) Draw the READ and WRITE cycle timing diagram of a typical semiconductor memory with different parameters. 3
- (b) Construct a $4K \times 8$ RAM using $4K \times 1$ RAM chips. 3
- (c) Draw and describe the operation of a SRAM. 4
5. (a) Describe briefly synchronous and asynchronous serial communication. 4.5
- (b) Draw the block diagram of 8251A serial communication interface. 3.5
- (c) Draw the format of mode register of 8251A. 2
6. (a) Explain with figures how data can be transferred between main memory and an external I/O device using DMA controller. 4
- (b) Draw the block diagram of 8237 DMA controller. 3
- (c) Explain the operation of the 8284A clock generator. 3
7. (a) Write down the features of 80286 microprocessor. 3
- (b) Draw the descriptor formats of 80286 and 80386 microprocessors. 4
- (c) Explain with necessary figure how 80286 microprocessor translates logical address to physical address. 3
8. (a) What are Program invisible registers? 2
- (b) Draw a typical interface circuit to interface an 8×8 keypad and 8-digit display with 8279 IC. 3
- (c) Define 2-Key lockout and N-Key rollover. 2
- (d) Discuss with example how physical address calculation is done in 8086. ----



Jahangirnagar University
Department of Computer Science and Engineering
Fourth Year First Semester B.Sc. (Hons.) Final Examination -2021

Course Title: Computer Networks
Time: 3 Hours

Course No: CSE-401
Full Marks: 60

[Answer each of the following questions. Each question carries equal marks. Figures in the right margin indicate marks.]

1.

Question No. 1 based on *CO1*. Answer all of them.

- a) Why ATM cell is preferable for high speed data communication? 2
- b) Mention two basic functions of LLC sublayer. 2
- c) Compare IP address and MAC address. 2
- d) What are the basic functions of presentation layer under OSI? 2
- e) Write down the series of steps performed by a browser to bring a webpage when a user clicks on a hyperlink. 2
- f) Identify different classes of IP address and give their ranges. 2

2.

Question No. 2 based on *CO2*. Answer Any three out of four.

- a) (i)What is the main problem of 'Byte count method' in framing? Give your opinion about its remedial measure. 2
(ii)What is the best case and worst case of 'byte stuffing' and 'bit stuffing' technique of framing? 2
- b) Compare leaky and token bucket algorithm in traffic shaping. The capacity of the token bucket $C = 250\text{KB}$, token arrival rate $\rho = 2\text{MB/sec}$ and the maximum drain rate $M = 25\text{MB/sec}$. Determine (i) duration of maximum rate (ii) time to maintain the token rate for the volume of the burst data of 1MB. 4
- c) Why DNS is used against IP of a web? Give the steps of determination of IP address against a DNS. 4
- d) Explain the CSMA/CD Protocol in MAC Sublayer. 4

3.

Question No. 3 is based on *CO3*. Answer Any three out of four.

- a) An information source generates message bit string, $M = 11001011$ (8 bits); Generator bit string, $G = 10001$ (5 bits); i) Determine the polynomials: $R(x)$ and $T(x)$ ii) How to avoid ambiguity of single bit, 2 bits and odd number of bit error? 3
- b) Compare asymmetric and symmetric release of end to end connection. Show the arrangement of three-way handshake for connection release. How to avoid loss of DR and ACK under this protocol? 3

- c) Draw the complete diagram of IPv4 packet and mention the function of Differentiated Services and Fragment Offset. Give steps of calculating a header checksum of IP packet. 4
- d) Differentiate between Go-Back-N and selective repeat Data Link Layer protocol with timing diagrams. 4

4.

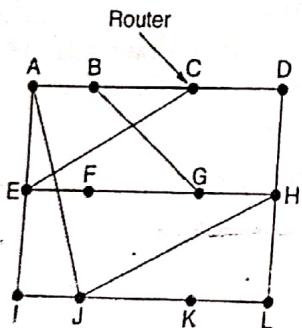
Question No. 4 is based on **C04**. Answer *Any three*.

- a) Give basic principle of asymmetric key cryptography. Taking $p = 3$ and $q = 11$ determine all the parameters of RSA then verify encryption and decryption of the vector $V = [12 \ 7 \ 15]$. 4
- b) Consider user1 under a residential area is sending an e-mail to user2 working in an organization. Suppose that the mail servers of them are *isp.com* and *organization.com* respectively. The e-mail addresses of user1 and user2 are *user1@isp.com* and *user2@organization.com* respectively. Give the steps for e-mail exchange between user 1 and user 2 with appropriate diagram. 4
- c) (i) Clarify *Transfer mode* and *Asynchronous* of ATM. Show the VC and VP switching of ATM network with appropriate diagram and table. 3
(ii) Compare congestion control and flow control 1
- d) Draw the block diagram of the TCP header and briefly explain the significance of different fields. 4

5.

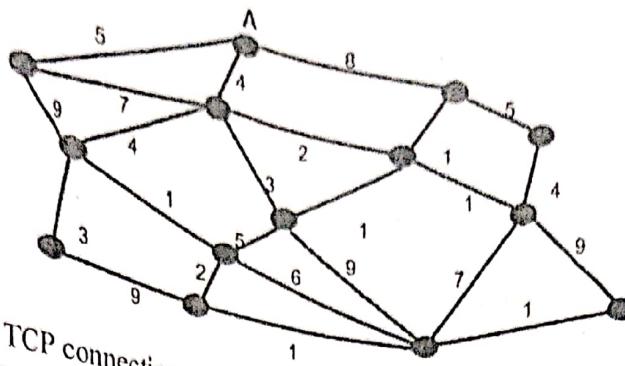
Question No. 5 is based on **C05**. Answer *Any two*.

- a) (i) If the new delay of links associated with node J is, $JA=20ms$, $Jl=25ms$, $JH=18ms$ and $JK=30ms$ then determine the new delay of J to F using help of following routing table under distance vector routing algorithm. 4

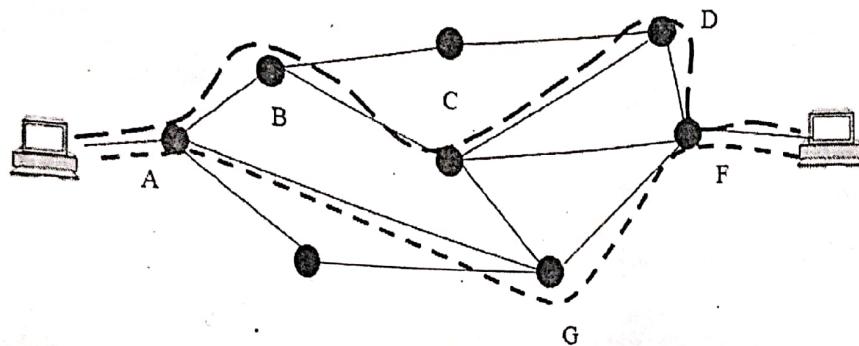


To	A	I	H	K
A	0	24	20	21
B	12	36	31	28
C	25	18	19	36
D	10	27	8	24
E	14	7	30	22
F	23	20	19	40
G	18	31	6	31
H	17	20	0	19
I	21	0	14	22
J	9	11	7	10
K	24	22	22	0
L	29	33	9	9

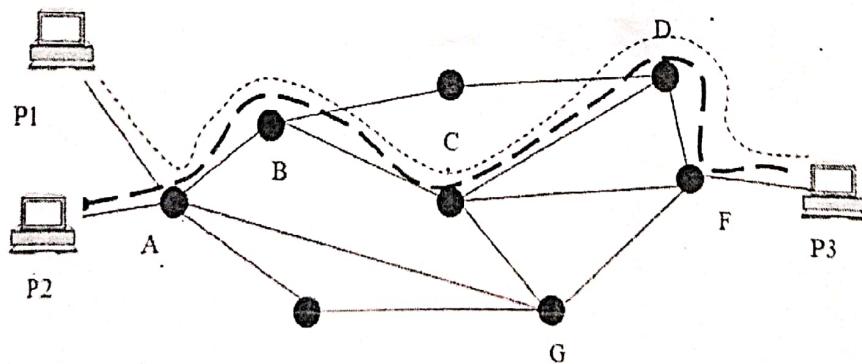
- (ii) Draw the sink tree of the following network taking A as the root/destination 2



- b) (i) Suppose two TCP connections are present over some bottleneck link of rate R bps. Both connections have a huge file to send (in the same direction over the bottleneck link). The transmissions of the files start at the same time. What transmission rate would TCP like to give to each of the connections? 4
- (ii) If the subnet mask 255.255.255.224 is used for a class C IP address then find the number of subnets and number of hosts/subnet. If above subnet mask is used for class B IP address then find the number of subnets and number of hosts/subnet. 2
- c) (i) Show the routing table of router A for connectionless service where first few packets follow A-G-F route and the subsequent packets follow A-B-C-F route. 2



- (ii) Show the routing table of all routers for connection-oriented service, where process P1 and P2 send packets to process P3. 2



- (iii) Give three remedial measures against excess flooding of packet in a network. 2

[End of question script]